VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Compute, IaaS and Virtual Maschines

Virtual Machines		Kubernetes Services		Relational		Virtual Desktops		Object Storage		Cloud Network	
Amazon EC2	vSphere + VCD	Amazon EKS	CSE + TKG	Amazon RDS	MySQL	Amazon WorkSpaces	Horizon Desktops	Amazon S3	VCD + OSE	Amazon VPC	VDC Networks

Auto Scaling		Container Services		NoSQL		Virtual Applications		Archive Storage		Load Balancing	
EC2 Auto Scaling	VCD Auto Scaling	ECS / Fargate	vSphere 7 with K8s	DynamoDB	Cassandra	Amazon AppStream	Horizon Apps	Amazon S3 Glacier	VCD + OSE	AWS ELB	NSX Advanced LB

SDDC Services		Registry Services		Caching		Resource Acceess		File Storage Service		Firewall	
VMC on AWS	VCF / DTCP	Amazon ECR	Harbor	ElastiCache	Redis / Memcached	Amazon WorkLink	WSONE Apps	Amazon EFS	vSAN File Service	AWS WAF / Firewall	NSX DFW

Hybrid / On Premises Cloud		Serverless Computing		Document		Single Sign-On		Block Storage Volumes		WAN Connectivity	
AWS Outposts	VMC on Dell EMC	Amazon Lambda	VCD + OpenFaaS	Document DB	Mongo DB	AWS Single Sign-On	WSONE Access	Amazon EBS	vSAN	Direct Connect / VPN	VeloCloud SD-WAN

Containers & Serverless Computing · **Databases** · **End User Computing** · **Storage and Data Management** · **Networking and Connectivity**

Applications, Web, Mobile and Integration

Application PaaS		App Marketplace	
Elastic Beanstalk	TAS	AWS Marketplace	Cloud Marketplace

API Gateway		Service Catalog	
API Gateway	Bitnami + Kong	AWS Service Catalog	vRA Service Broker

Message Queue Service		Ready-to-use Stacks	
Amazon MQ / SQS	Bitnami + ActiveMQ	AWS Lightsail	VCD ALP + Bitnami

Pub/Sub Nofitication		Search Engine	
Amazon SNS	Bitnami + Kafka	Amazon Elasticsearch	Elasticsearch

Miscellaneous

Data Protection, Recovery and Migration

Cloud Disaster Recovery	
CloudEndure Disaster Recovery	VCDA SRM

Cloud Migration	
CloudEndure Migration	HCX VCDA

Backup	
AWS Backup	Data Protection Suite EcoSystem

Analytics, Big Data, IoT and Machine Learning

Hosted Hadoop	
Amazon EMR	Bitnami + Hadoop

Deep Learning Framework	
Apache MXNet	Bitnami + MXNet
PyTorch	Bitnami + PyTorch
Tensorflow	Bitnami + Tensorflow

IoT	
Device Management	WSONE UEM

DevOps and Development

CI / CD	
CodeDeploy CodeCommit CodePipeline	vRA CodeStream Bitnami + Jenkins Bitnmai + GitLab

Infrastructure as Code	
AWS CloudFormation	vRA Cloud Assembly Terraform

Artifact Management	
AWS CodeArtifact	JFrog Artifactory

Management, Monitoring, Logging and Compliance

Cost and Optimization	
Trusted Advisor	CloudHealth

Monitoring and Logging	
AWS CloudTrail AWS CloudWatch AWS Cloud Map	vRealize Operations vRNI and vRLI Caveonix

Billing and Chargeback	
AWS Organization Cost Explorer	CP HUB, Usage Meter vROps Chargeback

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Compute, IaaS and Virtual Maschines

vm

Virtual Machines
Amazon EC2	vSphere + VCD

Auto Scaling
EC2 Auto Scaling	VCD Auto Scaling

SDDC Services
VMC on AWS	VCF / DTCP

Hybrid / On Premises Cloud
AWS Outposts	VMC on Dell EMC

Cloud Provider Resources

VMware Cloud Provider Program:
https://www.vmware.com/partners/service-provider.html

VMware Cloud Director:
https://www.vmware.com/products/cloud-director.html

VMware Cloud Director service:
https://cloud.vmware.com/cloud-provider-hub/cloud-director-service

VMC on AWS MSP Program:
https://cloud.vmware.com/cloud-provider-hub/vmc-aws

Virtual Machines

aws — Amazon EC2

"Amazon EC2 presents a true virtual computing environment, allowing you to use web service interfaces to launch instances with a variety of operating systems, load them with your custom application environment, manage your network's access permissions, and run your image using as many or few systems as you desire."
Source: https://aws.amazon.com/ec2/features/

VMware vSphere / VMware Cloud Director (service) — vmware

vSphere is a server virtualization platform that delivers essential services for the modern hybrid cloud.
https://www.vmware.com/products/vsphere.html

VMware Cloud Director (service) is a leading cloud service-delivery platform used by some of the world's most popular cloud providers to operate and manage successful cloud-service businesses.
https://www.vmware.com/products/cloud-director.html

Auto Scaling

aws — Amazon EC2 Auto Scaling

"Amazon EC2 Auto Scaling helps you maintain application availability and allows you to automatically add or remove EC2 instances according to conditions you define. You can use the fleet management features of EC2 Auto Scaling to maintain the health and availability of your fleet."
Source: https://aws.amazon.com/ec2/autoscaling/

VMware Cloud Director Auto Scaling — vmware

In this blog post, we will present a horizontal autoscaling solution using:
vCloud Director (vCD)'s native UI extensibility as management frontend
vRealize Orchestrator (vRO) as backend.
vRealize Operations (vROps) as monitoring system.
https://blogs.vmware.com/cloudprovider/2018/08/autoscaling-with-vcloud-director-9-x.html

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SDDC Services

aws — VMware Cloud on AWS

"With VMware Cloud on AWS you can migrate datacenters to the cloud for rapid datacenter evacuation, disaster recovery, and application modernization. With over 3 years of joint engineering, VMware and AWS provide organizations with enhanced VMware functionalities integrated in the solution and a single point of contact for support and service integration."
Source: https://aws.amazon.com/vmware/

VMware Cloud Foundation / Dell Technologies Cloud Platform — vmware

VMware Cloud Foundation is the hybrid cloud platform for managing VMs and orchestrating containers, built on full-stack hyperconverged infrastructure (HCI) technology. With a single architecture that is easy to deploy, VMware Cloud Foundation enables consistent, secure infrastructure and operations across private and public cloud. https://www.vmware.com/products/cloud-foundation.html

Dell Technologies Cloud Platform (DTCP) delivers a turnkey experience that's easy to deploy and manage due to the tight integration between VMware Cloud Foundation and VxRail.
https://www.delltechnologies.com/en-us/cloud/platforms/dell-technologies-cloud-platform.htm

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Hybrid / On Premises Cloud

aws — AWS Outposts

"AWS Outposts is a fully managed service that extends AWS infrastructure, AWS services, APIs, and tools to virtually any datacenter, co-location space, or on-premises facility for a truly consistent hybrid experience."
Source: https://aws.amazon.com/outposts/

VMware Cloud on Dell EMC — vmware

VMware Cloud on Dell EMC is a fully managed hybrid cloud service that combines the simplicity and agility of the public cloud with the security and control of on-premises infrastructure. Delivered as a service to data center and edge locations, VMware Cloud on Dell EMC and its hybrid cloud services provide you with simple, secure, and scalable infrastructure.
https://www.vmware.com/products/vmc-on-dell-emc.html

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Containers & Serverless Computing

Kubernetes Services
| Amazon EKS | CSE + TKG |

Container Services
| ECS / Fargate | vSphere 7 with K8s |

Registry Services
| Amazon ECR | Harbor |

Serverless Computing
| Amazon Lambda | VCD + OpenFaaS |

Cloud Provider Resources

KaaS Reference Architecture:
https://cloudsolutions.vmware.com/reference-architectures/kubernetes-as-a-service-in-vcloud-director-9-7-reference-architecture

Tanzu Kubernetes Grid:
https://tanzu.vmware.com/kubernetes-grid

vSphere 7 with Kubernetes:
https://www.vmware.com/content/damvSDphere/digitalmarketing/vmware/en/pdf/vsphere/vmw-vsphere7-solution-brochure.pdf

Harbor Container Registry:
https://goharbor.io/

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aws — Amazon EKS — Kubernetes Services

"Amazon Elastic Kubernetes Service (Amazon EKS) is a fully managed Kubernetes service. Customers such as Intel, Snap, Intuit, GoDaddy, and Autodesk trust EKS to run their most sensitive and mission critical applications because of its security, reliability, and scalability."
Source: https://aws.amazon.com/eks/

aws — Amazon ECS — Container Services

"Amazon Elastic Container Service (Amazon ECS) is a fully managed container orchestration service. Customers such as Duolingo, Samsung, GE, and Cookpad use ECS to run their most sensitive and mission critical applications because of its security, reliability, and scalability."
Source: https://aws.amazon.com/ecs/

aws — Amazon ECR — Registry Services

"Amazon Elastic Container Registry (ECR) is a fully-managed Docker container registry that makes it easy for developers to store, manage, and deploy Docker container images."
Source: https://aws.amazon.com/ecr/

aws — AWS Lambda — Serverless Computing

"With Lambda, you can run code for virtually any type of application or backend service - all with zero administration. Just upload your code and Lambda takes care of everything required to run and scale your code with high availability."
Source: https://aws.amazon.com/lambda/

VMware Cloud Director (service) Developer-ready Cloud with Container Service Extension, Tanzu Kubernetes Grid, Harbor and vSphere 7 with Kubernetes

CSE brings Kubernetes as a Service to VCD / CDS, by enabling tenant users to deploy fully functional Kubernetes clusters based on native K8s, Tanzu Kubernetes Grid and vSphere 7 with Kubernetes.

Tanzu Kubernetes Grid is an CNCF-certified, enterprise-ready Kubernetes runtime that streamlines operations across a multi-cloud infrastructure.

vSphere Pod Service in vSphere 7 with Kubernetes is a service that runs on a VMware managed Kubernetes control plane over your ESXi cluster. It allows you to run native Kubernetes workloads directly on ESXi. The ESXi hosts become the Nodes and vSphere Pods are what are running the components of the app workloads.

Helm Charts for Kubernetes apps can be deployed into K8s cluster using the VCD App Launchpad 2.0.

Tanzu Kubernetes Grid Service	vSphere Pod Service	Registry Service	Storage Service	Network Service
Manage consistent, compliant and conformant Kubernetes clusters.	Run containers directly on the hypervisor for improved security, performance, and manageability.	Store, manage and secure Docker and OCI images.	Manage persistent disks for use with containers, Kubernetes clusters, and virtual machines.	Manage virtual routers, load balancers, and firewall rules.

Harbor is an open source trusted cloud-native registry to store, sign, and scan content. It adds functionalities like security, identity, and management to the open source Docker distribution.

VCD Extensibility

Providers can use the VCD extensibility framework with vRealize Orchestrator to build FaaS, using for example OpenFaaS or Knative. Or Kubeless, which is another community-supported Bitnami project.

https://blogs.vmware.com/cloudprovider/2020/06/building-a-developer-ready-cloud-to-offer-serverless-web-app-capabilities-with-the-vmware-cloud-provider-platform-part-1.html

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Databases

Managed Relational Databases

Amazon RDS	MySQL

NoSQL Databases

DynamoDB	Cassandra

Caching Databases

ElastiCache	Redis / Memcached

Document Databases

Document DB	Mongo DB

Cloud Provider Resources

Bitnami Packages:
https://bitnami.com/stacks

Bitnami MSP Program:
https://cloud.vmware.com/cloud-provider-hub/bitnami-community-catalog

MSP Program and Cloud Provider Hub:
https://cloud.vmware.com/cloud-provider-hub/

VCD App Launchpad Launch Blog:
https://blogs.vmware.com/cloudprovider/2020/04/easy-application-deployment-in-vmware-cloud-director-with-app-launchpad.html

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Amazon RDS — Relational

"Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching and backups."
Source: https://aws.amazon.com/rds/

Amazon DynamoDB — NoSQL

"Amazon DynamoDB is a key-value and document database that delivers single-digit millisecond performance at any scale. It's a fully managed, multiregion, multimaster, durable database with built-in security, backup and restore, and in-memory caching for internet-scale applications."
Source: https://aws.amazon.com/dynamodb/

Amazon ElastiCache — Caching

"Amazon ElastiCache allows you to seamlessly set up, run, and scale popular open-Source compatible in-memory data stores in the cloud. Build data-intensive apps or boost the performance of your existing databases by retrieving data from high throughput and low latency in-memory data stores."
Source: https://aws.amazon.com/elasticache/

AWS DocumentDB — Document

"Amazon DocumentDB (with MongoDB compatibility) is a fast, scalable, highly available, and fully managed document database service that supports MongoDB workloads. As a document database, Amazon DocumentDB makes it easy to store, query, and index JSON data."
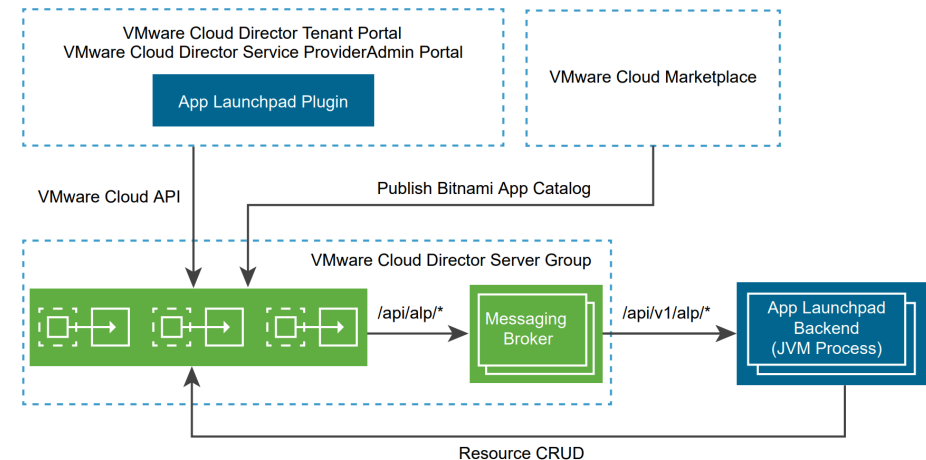Source: https://aws.amazon.com/documentdb/

VCD App Launchpad:

MySQL / Cassandra / Redis / Memcached / MongoDB
from Bitnami Catalog

Bitnami Community Catalog available through the VMware Managed Service Provider program allows service providers to offer well-architected and secure applications and frameworks as a service. Bitnami provides access to more than 180 pre-packaged, tested and security-hardened open-source solutions. Use MySQL or PostgreSQL for relational Databases, MongoDB or Cassandra as NoSQL and Document databases and Redis or Memcached for caching. These are available as vApp Templates that can be published through the VCD catalog for self-service by tenants with App Launchpad.

MongoDB	CouchDB	Neo4j	PostgreSQL
5.0 ★ Database	5.0 ★ Database	5.0 ★ Database	4.0 ★ Database
MySQL	**Redis**	**Cassandra**	**MariaDB**
4.7 ★ Database	4.0 ★ Database	5.0 ★ Database	- Database

VMware Cloud Director Tenant Portal
VMware Cloud Director Service ProviderAdmin Portal

App Launchpad Plugin

VMware Cloud Marketplace

VMware Cloud API

Publish Bitnami App Catalog

VMware Cloud Director Server Group

/api/alp/*

Messaging Broker

/api/v1/alp/*

App Launchpad Backend (JVM Process)

Resource CRUD

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Networking and Connectivity

Cloud Network
Amazon VPC	VDC Networks

Load Balancing
AWS ELB	NSX Advanced LB

Firewall
AWS WAF / Firewall	NSX DFW

WAN Connectivity
Direct Connect / VPN	VeloCloud SD-WAN

Cloud Provider Resources

Architecting Tenant Networking with VMware NSX in VCD:
https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/vcat/vmware-architecting-tenant-networking-with-nsx-in-vcd.pdf

Deploying NSX Advanced Load Balancer with VCD
https://cloudsolutions.vmware.com/assets/blt4c03b74177c376f2/Deploying_NSX_Advanced_Load_Balancer_with_VMware_Cloud_Director.pdf

VeloCloud SD-WAN MSP Program:
https://vmstarcommunity.force.com/partnerconnect/s/sdwan-by-velocloud

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Amazon VPC — Cloud Network

"Amazon Virtual Private Cloud (Amazon VPC) lets you provision a logically isolated section of the AWS Cloud where you can launch AWS resources in a virtual network that you define."
Source: https://aws.amazon.com/vpc/

Amazon ELB — Load Balancing

"Elastic Load Balancing automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, containers, IP addresses, and Lambda functions. It can handle the varying load of your application traffic in a single Availability Zone or across multiple Availability Zones."
Source: https://aws.amazon.com/elasticloadbalancing/

AWS Web Application Firewall — Firewall

"AWS WAF is a web application firewall that helps protect your web applications or APIs against common web exploits that may affect availability, compromise security, or consume excessive resources."
Source: https://aws.amazon.com/waf/

AWS VPN — WAN Connectivity

"AWS Virtual Private Network solutions establish secure connections between your on-premises networks, remote offices, client devices, and the AWS global network."
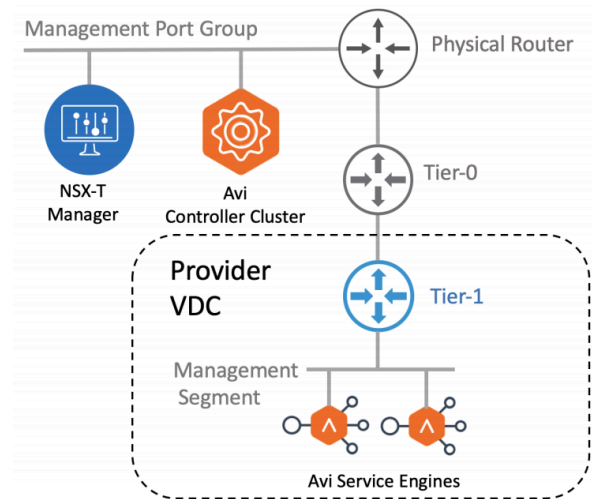Source: https://aws.amazon.com/vpn/

VMware NSX Distributed Firewall and Advanved Load Balancer with Cloud Director VDC Networks

An organization virtual data center network allows vApps in an organization to communicate with each other. To provide external connectivity, you can connect an organization virtual data center network to an external network. You can also create an isolated organization virtual data center network that is internal to the organization

VMware NSX Advanced Load Balancer (Avi) provides multi-cloud load balancing, web application firewall and application analytics across on-premises data centers and any cloud. The software-defined platform delivers applications consistently across bare metal servers, virtual machines and containers to ensure a fast, scalable, and secure application experience.

Easily create, enforce, and automatically manage granular micro-segmentation policies between applications, services, and workloads across multi-cloud environments spanning VMs, containers, and bare metal infrastructures. Secure critical applications and shared services from compromises by auto-discovering application boundaries and applying application-level segmentation policies

VeloCloud SD-WAN

VMware SD-WAN assures enterprise and cloud application performance over Internet and hybrid WAN while simplifying deployments and reducing costs.

https://www.velocloud.com/

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

End User Computing

Virtual Desktops
Amazon WorkSpaces	Horizon Desktops

Virtual Applications
Amazon AppStream	Horizon Apps

Resource Acceess
Amazon WorkLink	WSONE Apps

Single Sign-On
AWS Single Sign-On	WSONE Access

Cloud Provider Resources

VMware Horizon DaaS:
https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/products/daas/vmware-horizon-daas-platform-datasheet.pdf

VMware Workspace ONE:
https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/products/workspace-one/vmware-workspace-one-datasheet.pdf

MSP Program Overview:
https://www.vmware.com/de/partners/service-provider/managed-services.html

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Amazon WorkSpaces — Virtual Desktops

"Amazon WorkSpaces is a managed, secure Desktop-as-a-Service (DaaS) solution. You can use Amazon WorkSpaces to provision either Windows or Linux desktops in just a few minutes and quickly scale to provide thousands of desktops to workers across the globe."
Source: https://aws.amazon.com/workspaces/

VMware Horizon DaaS & Horizon Apps

The VMware Horizon DaaS Platform enables service providers to deliver virtual workspaces—including full desktops, shared desktops and applications—to end users as a monthly subscription service. VMware enables a risk-free, incremental evolution of the nextgeneration workspace. It provides a complete virtual workspace from the cloud, delivering desktops and applications as an easily managed, integrated cloud service. Enterprises can rapidly provision desktops and applications to users on any device, anywhere. And desktop virtualization is transformed from the CAPEX outlay inherent in enterprise onsite desktop virtualization and physical PC refreshes, into a predictable, easy to budget OPEX item.

Service Provider — Cloud

- Go to Market
- +1 Value-Adds
- Business Operations
- SW Operations
- VMware Horizon DaaS
- Hardware Operations
- Hardware

Amazon AppStream — Virtual Applications

"Amazon AppStream 2.0 is a fully managed application streaming service. You centrally manage your desktop applications on AppStream 2.0 and securely deliver them to any computer."
Source: https://aws.amazon.com/appstream2/

Amazon WorkLink — Resource Access

"Amazon WorkLink is a fully managed service that lets you provide your employees with secure, easy access to your internal corporate websites and web apps using their mobile phones."
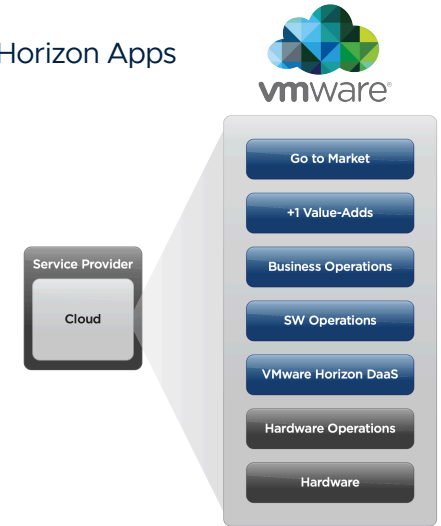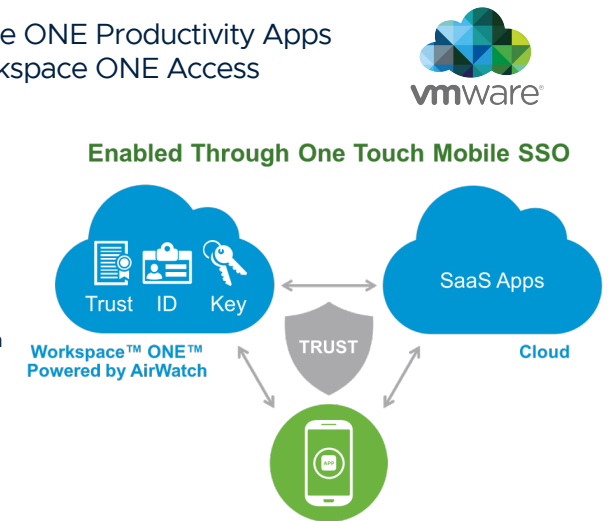Source: https://aws.amazon.com/worklink/

VMware Workspace ONE Productivity Apps / VMware Workspace ONE Access

VMware Workspace ONE is the intelligence-driven digital workspace platform that simply and securely delivers and manages any app on any device by integrating access control, application management, and multiplatform endpoint management. It begins with consumer-simple, single sign-on (SSO) access to cloud, mobile, web, and Windows apps in one unified catalog, and includes powerfully integrated email, calendar, file, and social collaboration tools that engage employees.

Enabled Through One Touch Mobile SSO

Trust · ID · Key

Workspace™ ONE™ Powered by AirWatch · TRUST · SaaS Apps · Cloud

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AWS Single Sign-On — Single Sign-On

"AWS Single Sign-On (SSO) makes it easy to centrally manage access to multiple AWS accounts and business applications and provide users with single sign-on access to all their assigned accounts and applications from one place. With AWS SSO, you can easily manage access and user permissions to all of your accounts in AWS Organizations centrally."
Source: https://aws.amazon.com/single-sign-on/

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Data Protection, Recovery and Migration

Cloud Disaster Recovery	
CloudEndure Disaster Recovery	VCDA SRM

Cloud Migration	
CloudEndure Migration	HCX VCDA

Backup	
AWS Backup	Data Protection Suite Ecosystem Partners

Cloud Provider Resources

VMware DR as a Service:
https://cloudsolutions.vmware.com/disaster-recovery

VMware HCX:
https://cloud.vmware.com/vmware-hcx

VMware Site Recovery:
https://cloud.vmware.com/vmware-site-recovery

Dell EMC Data Protection and the VMware Cloud Provider Program:
https://www.delltechnologies.com/en-us/data-protection/vcloud-director/

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aws — CloudEndure Disaster Recovery / CloudEndure Migration

Cloud Disaster Recovery / Cloud Migration

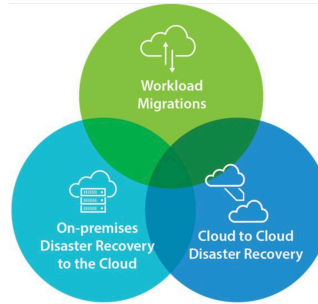**vmware** — VMware Cloud Director Availability / VMware Hybrid Cloud Extension / VMware Site Recovery (Manager)

"CloudEndure Disaster Recovery continuously replicates your machines (including operating system, system state configuration, databases, applications, and files) into a low-cost staging area in your target AWS account and preferred Region. In the case of a disaster, you can instruct CloudEndure Disaster Recovery to automatically launch thousands of your machines in their fully provisioned state in minutes."
Source: https://aws.amazon.com/cloudendure-disaster-recovery/

"CloudEndure Migration conducts continuous, block-level data replication of your source machines into a staging area in your AWS account without causing downtime or impacting performance. When you're ready to launch the production machines, CloudEndure Migration automatically converts your machines from their source infrastructure into the AWS infrastructure so they can boot and run natively in AWS."
Source: https://aws.amazon.com/cloudendure-migration/

Workload Migrations

On-premises Disaster Recovery to the Cloud

Cloud to Cloud Disaster Recovery

VMware Cloud Director Availability is a powerful solution built to offer simple, secure, and cost-effective onboarding, migration, and disaster recovery services "to" or "between" multi-tenant VMware clouds. It provides integrated VCD self-service and requires not source-side agents.
https://www.vmware.com/products/cloud-director-availability.html

VMware HCX is an application mobility platform designed for simplifying application migration, workload rebalancing and business continuity across datacenters and clouds. HCX is designed to provide simplified large-scale application mobility across any VMware-based SDDC environment including VMware Cloud Foundation, VMware Cloud on AWS, Azure VMware Service and all VMware Cloud Provider Partner offerings.
https://cloud.vmware.com/vmware-hcx

VMware Site Recovery Manager is a disaster recovery solution that provides automated orchestration and non-disruptive testing of centralized recovery plans for all virtualized applications. It allows Service Providers to offer reliable, automated protection for workloads hosted on their own cloud infrastructure and being replicated to another cloud destination (DR of the cloud) or workloads running on customer premises and being replicated to the cloud infrastructure (DR to the Cloud). It integrates natively with VMware vSphere Replication or with a broad range of array-based replication solutions available from all major VMware storage partners. VMware Site Recovery brings this trusted replication, orchestration and automation technologies to VMware Cloud on AWS to protect applications in the event of site failures.
https://cloud.vmware.com/vmware-site-recovery

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aws — AWS Backup

Backup

vmware — VMware Cloud Director Data Protection Suite (DellEMC) / Ecosystem Partners and Solutions

"AWS Backup is a fully managed backup service that makes it easy to centralize and automate the backup of data across AWS services. Using AWS Backup, you can centrally configure backup policies and monitor backup activity for AWS resources, such as Amazon EBS volumes, Amazon EC2 instances, Amazon RDS databases, Amazon DynamoDB tables, Amazon EFS file systems, and AWS Storage Gateway volumes."
Source: https://aws.amazon.com/backup/

The Dell EMC Data Protection Extension is the first certificated data protection solution for VMware vCloud Director, which is also a native data protection solution. It extends the vCloud Director HTML 5 UI and REST API providing tenants a single management end-point for their virtual datacenters. Tenants can manage image level backups of VMs and vApps, restore to a new VM or in-place, by policy or adhoc, even file level restore: https://kb.vmware.com/s/article/71302
Other integrated Backup Solutions are available from Ecosystem Partners, for example:
- Commvault: https://kb.vmware.com/s/article/71356
- Veeam: https://kb.vmware.com/s/article/71287
- Cohesity; https://kb.vmware.com/s/article/71326
- Rubrik: https://kb.vmware.com/s/article/71303

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Storage and Data Management

Object Storage	
Amazon S3	VCD + OSE

Archive Storage	
Amazon S3 Glacier	VCD + OSE

File Storage Service	
Amazon EFS	vSAN File Service

Block Storage Volumes	
Amazon EBS	vSAN

Cloud Provider Resources

What is VMware Cloud Director Object Storage Extension:
https://docs.vmware.com/en/VMware-Cloud-Director-Object-Storage-Extension/2.0/Installing-and-Configuring/GUID-43E2168F-6D7E-4079-BD82-64BAC98B9C54.html

Developing a HyperConverged Storage Strategy for VCD with VMware vSAN:
https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/vcat/vmware-developing-a-vcloud-director-storage-strategy-with-virtual-san.pdf

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Object and Archive Storage

aws — Amazon Simple Storage Service / Amazon S3 Glacier

"Amazon Simple Storage Service (Amazon S3) is an object storage service that offers industry-leading scalability, data availability, security, and performance. This means customers of all sizes and industries can use it to store and protect any amount of data for a range of use cases, such as websites, mobile applications, backup and restore, archive, enterprise applications, IoT devices, and big data analytics."
Source: https://aws.amazon.com/s3/

"Amazon S3 Glacier and S3 Glacier Deep Archive are a secure, durable, and extremely low-cost Amazon S3 cloud storage classes for data archiving and long-term backup. They are designed to deliver 99.999999999% durability, and provide comprehensive security and compliance capabilities that can help meet even the most stringent regulatory requirements."
Source: https://aws.amazon.com/glacier/

VMware Cloud Director Object Storage Extension
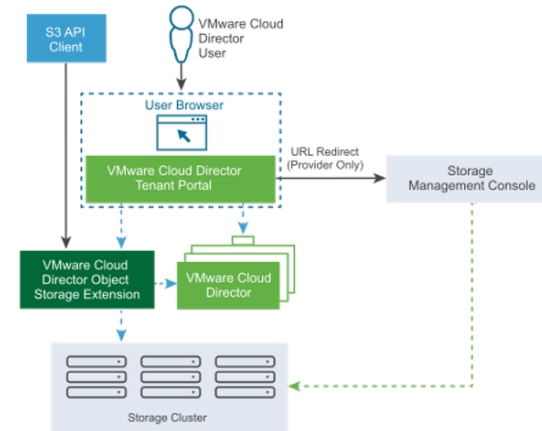
VMware Cloud Director Object Storage Extension runs atop of a storage cluster or AWS S3 and provides object storage capabilities to the users of VMware Cloud Director. OSE supports native integration with AWS S3 with the multi tenancy of VMware Cloud Director and also supports the complete set of native S3 APIs.

Starting with VMware Cloud Director Object Storage Extension 1.5, you can configure VMware Cloud Director Object Storage Extensionwith a Dell EMC ECS or with a Cloudian HyperStore cluster.

For service providers, this solution supports services such as Storage-as-a-Service, Backup- as-a-Service, WORM Object Lock security, and software development.

File Storage Service

aws — Amazon Elastic File System

"Amazon Elastic File System (Amazon EFS) provides a simple, scalable, fully managed elastic NFS file system for use with AWS Cloud services and on-premises resources. It is built to scale on demand to petabytes without disrupting applications, growing and shrinking automatically as you add and remove files, eliminating the need to provision and manage capacity to accommodate growth."
Source: https://aws.amazon.com/efs/

VMware vSAN File Service

vSAN File Service is a layer that sits on top of vSAN to provide file shares. It currently supports NFSv3 and NFSv4.1 file shares. vSAN File Service comprises of vSAN Distributed File System (vDFS) which provides the underlying scalable filesystem by aggregating vSAN objects, a Storage Services Platform which provides resilient file server end points and a control plane for deployment, management, and monitoring.
https://docs.vmware.com/en/VMware-vSAN/

Block Storage Volumes

aws — AWS Elastic Block Store

„Amazon Elastic Block Store (EBS) is an easy to use, high performance block storage service designed for use with Amazon EC2 for both throughput and transaction intensive workloads at any scale. A broad range of workloads, such as relational and non-relational databases, enterprise applications, containerized applications, big data analytics engines, file systems, and media workflows are widely deployed on Amazon EBS."
Source: https://aws.amazon.com/ebs/

VMware vSAN

vSAN is enterprise-class, storage virtualization software that, when combined with vSphere, allows you to manage compute and storage with a single platform. With vSAN, you can reduce the cost and complexity of traditional storage and take the easiest path to hyperconverged infrastructure and hybrid cloud. Evolve to an integrated hyperconverged infrastructure (HCI) solution with vSAN to improve business agility, all while speeding operations and lowering costs.
https://www.vmware.com/products/vsan.html

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Applications, Web, Mobile and Integration

Application PaaS	
Elastic Beanstalk	TAS

API Gateway	
API Gateway	Bitnami + Kong

Message Queue Service	
Amazon MQ / SQS	Bitnami + ActiveMQ

Pub/Sub Nofitication	
Amazon SNS	Bitnami + Kafka

Cloud Provider Resources

Bitnami Packages:
https://bitnami.com/stacks

Bitnami MSP Program:
https://cloud.vmware.com/cloud-provider-hub/bitnami-community-catalog

MSP Program and Cloud Provider Hub:
https://cloud.vmware.com/cloud-provider-hub/

VCD App Launchpad Launch Blog:
https://blogs.vmware.com/cloudprovider/2020/04/easy-application-deployment-in-vmware-cloud-director-with-app-launchpad.html

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aws — AWS Elastic Beanstalk

Application PaaS

"AWS Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS."
Source: https://aws.amazon.com/elasticbeanstalk/

Spring Runtime	Windows and .NET	Autoscaling	Buildpacks
Metrics and Logging	CI / CD	RabbitMQ	Caching

VMware Tanzu Application Services

A modern runtime for Java, .NET, and Node apps: VMware Tanzu Application Service is purpose-built for developers to boost feature velocity and for operations teams to deliver world-class uptime.
https://tanzu.vmware.com/application-service

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aws — Amazon API Gateway

API Gateway

"Amazon API Gateway is a fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale. APIs act as the "front door" for applications to access data, business logic, or functionality from your backend services. Using API Gateway, you can create RESTful APIs and WebSocket APIs that enable real-time two-way communication applications."
Source: https://aws.amazon.com/api-gateway/

VCD Extensibility and App Launchpad:

Kong, ActiveMQ, Kafke from Bitnami Community Catalog MSP

Bitnami Community Catalog available through the VMware Managed Service Provider program allows service providers to offer well-architected and secure applications and frameworks as a service. Bitnami provides access to more than 180 pre-packaged, tested and security-hardened open-source solutions. Use Kong or NGINX as an API-Gateway or Active MQ, RabbitMQ or Kafka as Message Queue and Pub/Sub solutions. These are available as vApp Templates that can be published through the VCD catalog for self-service by tenants with App Launchpad.

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aws — Amazon MQ Simple Queue Service

Message Queue Service

"Amazon Simple Queue Service (SQS) is a fully managed message queuing service that enables you to decouple and scale microservices, distributed systems, and serverless applications."
Source: https://aws.amazon.com/sqs/
"Amazon MQ is a managed message broker service for Apache ActiveMQ that makes it easy to set up and operate message brokers in the cloud."
Source https://aws.amazon.com/amazon-mq/

Apache ActiveMQ is an open source message broker written in Java together with a full Java Message Service (JMS) client.

RabbitMQ is an open source general-purpose message broker that is designed for consistent, highly-available messaging scenarios (both synchronous and asynchronous).

Kafka is a distributed streaming platform designed to build real-time pipelines and can be used as a message broker or as a replacement for a log aggregation solution for big data applications.

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aws — Amazon Simple Notification Service

Pub/Sub Notification

"Amazon Simple Notification Service (SNS) is a fully managed messaging service for both system-to-system and app-to-person (A2P) communication. It enables you to communicate between systems through publish/subscribe (pub/sub) patterns that enable messaging between decoupled microservice applications or to communicate directly to users via SMS, mobile push and email."
Source: https://aws.amazon.com/sns/

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Miscellaneous

App Marketplace
AWS Marketplace	Cloud Marketplace

Service Catalog
AWS Service Catalog	vRA Service Broker

Ready-to-use Stacks
AWS Lightsail	VCD ALP + Bitnami

Search Engine
Amazon Elasticsearch	Elasticsearch

Cloud Provider Resources

vRealize Automation Cloud on VMware Cloud Provider Hub:
https://cloud.vmware.com/cloud-provider-hub/images/pdf/vRA-Cloud-on-Cloud-Provider-Hub-External-FAQ.pdf

Bitnami MSP:
https://cloud.vmware.com/cloud-provider-hub/bitnami-community-catalog

VMware Cloud Marketplace:
https://cloud.vmware.com/cloud-marketplace

App Marketplace

AWS Marketplace

"AWS Marketplace is a digital catalog with thousands of software listings from independent software vendors that make it easy to find, test, buy, and deploy software that runs on AWS."
Source: https://aws.amazon.com/marketplace

VMware Cloud Marketplace

VMware Cloud Marketplace enables customers to discover and deploy validated third-party and open-source solutions for VMware-based cloud environments. It enables VMware customers to tap into the rich ecosystem of solutions that work alongside VMware products. VMware Cloud Marketplace includes third-party solutions from ISVs, as well as open-source solutions.
https://cloud.vmware.com/cloud-marketplace/

Service Catalog

AWS Service Catalog

"AWS Service Catalog allows organizations to create and manage catalogs of IT services that are approved for use on AWS. These IT services can include everything from virtual machine images, servers, software, and databases to complete multi-tier application architectures."
Source: https://aws.amazon.com/servicecatalog/

VMware vRealize Automation Cloud Service Broker

VMware Service Broker aggregates native content from multiple clouds and platforms into a single catalog with role-based policies -service model for IT service deployments. Service Broker supports AWS, Azure, GCP and vSphere based clouds. Additionally Service Broker supports Cloud Assembly blueprints and AWS Cloud Formation Templates. The list of supported platforms and services will keep expanding.
https://cloud.vmware.com/service-broker

Ready-to-use Stacks

AWS Lightsail

"Lightsail is an easy-to-use cloud platform that offers you everything needed to build an application or website, plus a cost-effective, monthly plan. Lightsail is ideal for simpler workloads, quick deployments, and getting started on AWS. It's designed to help you start small, and then scale as you grow."
Source: https://aws.amazon.com/lightsail/

VMware Cloud Director App Launchpad

App Launchpad enables Service Providers to offer a marketplace of applications within VMware Cloud Director. App Launchpad is a plug-in for VMware Cloud Director that provides a user interface to easily access and launch applications from VMware Cloud Director content catalogs. Using App Launchpad, developers and DevOps engineers can launch applications to VMware Cloud Director in seconds. You can configure App Launchpad to work with Bitnami Applications, Apps from VMware Cloud Marketplace and in-house Applications
https://docs.vmware.com/en/VMware-Cloud-Director-App-Launchpad/

Search Engine

Amazon Elasticsearch Service

"Amazon Elasticsearch Service is a fully managed service that makes it easy for you to deploy, secure, and run Elasticsearch cost effectively at scale. You can build, monitor, and troubleshoot your applications using the tools you love, at the scale you need."
Source: https://aws.amazon.com/elasticsearch-service/

Elasticsearch from Bitnami Catalog

The Bitnami Elasticsearch Stack provides a one-click install solution for Elasticsearch. Elasticsearch is a distributed search and analytics engine. It is used for web search, log monitoring, and real-time analytics. Ideal for Big Data applications.
https://bitnami.com/stack/elasticsearch

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Analytics, Big Data, IoT and Machine Learning

Hosted Hadoop
Amazon EMR	Bitnami + Hadoop

Deep Learning Framework
Apache MXNet	Bitnami + MXNet
PyTorch	Bitnami + PyTorch
Tensorflow	Bitnami + Tensorflow

IoT
Device Management	WSONE UEM

Cloud Provider Resources

VMware Cloud Provider Program:
https://www.vmware.com/partners/service-provider.html

Bitnami MSP:
https://cloud.vmware.com/cloud-provider-hub/bitnami-community-catalog

MSP Program Overview:
https://www.vmware.com/de/partners/service-provider/managed-services.html
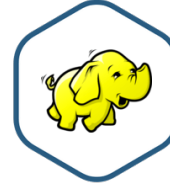

Amazon EMR — Hosted Hadoop — Hadoop from Bitnami Catalog

"Amazon EMR is the industry-leading cloud big data platform for processing vast amounts of data using open source tools such as Apache Spark, Apache Hive, Apache HBase, Apache Flink, Apache Hudi, and Presto."
Source: https://aws.amazon.com/emr/

Hadoop is a free, Java-based programming framework that supports the processing of large data sets in a distributed computing environment. It is part of the Apache project sponsored by the Apache Software Foundation. Hadoop makes it possible to run applications on systems with thousands of nodes involving thousands of terabytes.
https://bitnami.com/stack/hadoop

Apache MXNet on AWS / PyTorch on AWS / TensorFlow on AWS — Deep Learning Frameworks — Apache MXNet, PyTorch and Tensorflow from Bitnami Catalog

MXNet is a flexible and efficient library for deep learning designed to work as a neural network. Bitnami image ships OpenBLAS as math library.

PyTorch is a deep learning platform that accelerates the transition from research prototyping to production deployment. Bitnami image includes Torchvision for specific computer vision support.

TensorFlow Serving is an open source system for serving a wide variety of machine learning models. Developed and released by the Google Brain team in 2015, the system uses a standard architecture and set of APIs for new and existing machine learning algorithms and frameworks.

https://aws.amazon.com/mxnet/
https://aws.amazon.com/pytorch/
https://aws.amazon.com/tensorflow/

https://bitnami.com/stack/mxnet
https://bitnami.com/stack/pytorch
https://bitnami.com/stack/tensorflow-serving

AWS IoT Device Management — Internet of Things — VMware Workspace ONE Unified Endpoint Management

"AWS IoT Device Management makes it easy to securely register, organize, monitor, and remotely manage IoT devices at scale. With AWS IoT Device Management, you can register your connected devices individually or in bulk, and easily manage permissions so that devices remain secure."
Source: https://aws.amazon.com/iot-device-management/

Workspace ONE UEM platform enables organizations to securely manage any device—from laptops and smartphones to rugged devices and wearables—from a single console. Whether you're exploring workspace IoT technologies, pilot testing, or ready to roll-out to a production environment, leverage Workspace ONE to ensure all your endpoints are managed and meet corporate compliance and security standards.
https://www.vmware.com/de/products/workspace-one/workspace-iot.html

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

DevOps and Development

CI / CD

CodePipelin CodeDeploy CodeCommit e	vRA CodeStream Bitnami + Jenkins Bitnmai + GitLab

Infrastructure as Code

AWS CloudFormation	vRA Cloud Assembly Terraform

Artifact Management

AWS CodeArtifact	JFrog Artifactory

Cloud Provider Resources

vRealize Automation Cloud on VMware Cloud Provider Hub:
https://cloud.vmware.com/cloud-provider-hub/images/pdf/vRA-Cloud-on-Cloud-Provider-Hub-External-FAQ.pdf

Bitnami MSP:
https://cloud.vmware.com/cloud-provider-hub/bitnami-community-catalog

VCD Terraform Provider:
https://github.com/terraform-providers/terraform-provider-vcd

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CI/CD

aws
AWS CodePipeline
AWS CodeCommit
AWS CodeDeploy

"AWS CodePipeline is a fully managed continuous delivery service that helps you automate your release pipelines for fast and reliable application and infrastructure updates."
Source: https://aws.amazon.com/codepipeline/

"AWS CodeCommit is a fully-managed source control service that hosts secure Git-based repositories. It makes it easy for teams to collaborate on code in a secure and highly scalable ecosystem."
Source: https://aws.amazon.com/codecommit/

"AWS CodeDeploy is a fully managed deployment service that automates software deployments to a variety of compute services such as Amazon EC2, AWS Fargate, AWS Lambda, and your on-premises servers."
Source: https://aws.amazon.com/codedeploy/

vmware
VMware vRealize Automation Cloud CodeStream
GitLab and Jenkins from Bitnami Catalog

VMware Code Stream is a continuous integration and continuous delivery (CICD) tool that you use to build pipelines that model the software release process in your DevOps lifecycle. By creating pipelines, you build the code infrastructure that delivers your software rapidly and continuously.
https://cloud.vmware.com/code-stream

GitLab CE is an open source, cloud-based Git repository and version control system used by thousands of organizations worldwide.
https://bitnami.com/stack/gitlab

Jenkins supports multiple SCM tools including CVS, Subversion and Git. It can execute Apache Ant and Apache Maven-based projects as well as arbitrary scripts. Out of the box, the Bitnami Jenkins package includes Jenkins, Apache, Tomcat, and Git.
https://bitnami.com/stack/jenkins

Infrastructure as Code

aws
AWS CloudFormation

"AWS CloudFormation provides a common language for you to model and provision AWS and third party application resources in your cloud environment. AWS CloudFormation allows you to use programming languages or a simple text file to model and provision, in an automated and secure manner, all the resources needed for your applications across all regions and accounts."
Source: https://aws.amazon.com/cloudformation/

vmware
VCD Terraform
VMware vRealize Cloud Assembly

The Terraform Cloud Director provider enables administrators and DevOps engineers to define Cloud Director "infrastructure as code" inside Terraform configuration files.
https://github.com/terraform-providers/terraform-provider-vcd

VMware Cloud Assembly connects to public and private cloud providers to deploy machines, applications, and services to those resources. Develop blueprints-as-code in an environment that supports an iterative workflow, from development to testing to production."
https://cloud.vmware.com/cloud-assembly

Artifact Management

aws
AWS CodeArtifact

"AWS CodeArtifact is a fully managed artifact repository service that makes it easy for organizations of any size to securely store, publish, and share software packages used in their software development process."
Source: https://aws.amazon.com/codeartifact/

vmware
JFrog Artifactory Open Source from Bitnami Catalog

The Bitnami JFrog Artifactory Open Source Stack provides a one-click install solution for JFrog Artifactory Open Source. JFrog Artifactory Open Source is an open source repository manager, and includes features such as fine-grained permissions, LDAP integration, advanced artifacts management policies, scheduled backups, auditing, and more. JFrog Artifactory works with Maven, Ivy, and Gradle and supports hosting and remote proxying of artifacts.
https://bitnami.com/stack/artifactory

VMware Cloud Provider Partner Portfolio Comparison: AWS-Edition

Management, Monitoring, Logging and Compliance

Cost and Optimization

Trusted Advisor	CloudHealth

Monitoring and Logging

AWS CloudTrail AWS CloudWatch AWS Cloud Map	vRealize Operations vRNI and vRLI Caveonix

Billing and Chargeback

AWS Organization Cost Explorer	CP HUB, Usage Meter vROps Chargeback

Cloud Provider Resources

CloudHealth MSP Program:
https://cloud.vmware.com/cloud-provider-hub/cloud-health

vROps Cloud, vRNI Cloud, vRLI Cloud and other MSP services:
https://cloud.vmware.com/cloud-provider-hub/services

Usage Meter and Usage Insight:
https://cloud.vmware.com/cloud-provider-metering/

Cost and Optimization

aws — AWS Trusted Advisor

"AWS Trusted Advisor is an online tool that provides you real time guidance to help you provision your resources following AWS best practices. Trusted Advisor checks help optimize your AWS infrastructure, increase security and performance, reduce your overall costs, and monitor service limits."
Source: https://aws.amazon.com/premiumsupport/technology/trusted-advisor/

CloudHealth

CloudHealth is the most trusted cloud service management platform, providing business intelligence across multi-cloud environments. Partners can enable their end customers to analyze and manage cloud cost, usage, security, and governance in one place through the CloudHealth Platform.
https://cloud.vmware.com/cloud-provider-hub/cloud-health

Monitoring and Logging

aws — AWS CloudTrail / AWS CloudWatch / AWS Cloud Map

"AWS CloudTrail is a service that enables governance, compliance, operational auditing, and risk auditing of your AWS account."
Source: https://aws.amazon.com/cloudtrail/
"Amazon CloudWatch is a monitoring and observability service built for DevOps engineers, developers, site reliability engineers (SREs), and IT managers."
Source: https://aws.amazon.com/cloudwatch/
"AWS Cloud Map is a cloud resource discovery service. With Cloud Map, you can define custom names for your application resources, and it maintains the updated location of these dynamically changing resources."
Source: https://aws.amazon.com/cloud-map/

VMware vRealize Operations Cloud / vRealize Log & Network Insight Cloud / Caveonix RiskForesight

VMware vRealize Operations delivers self-driving IT operations management for private, hybrid, and multi-cloud environments in a unified, AI-powered platform. It full-stack visibility from physical, virtual and cloud infrastructure – including VMs and containers – to the applications they support.
https://www.vmware.com/products/vrealize-operations.html
VMware vRealize Network Insight helps you build an optimized, highly available and secure network infrastructure across hybrid and multi-cloud environments.
https://www.vmware.com/products/vrealize-network-insight.html
Caveonix RiskForesight is the first multi-tenant Cyber Risk & Compliance Management platform for the hybrid cloud, enabling Service Providers to offer workload protection services to their customers.
https://www.caveonix.com/resources/vmware-cloud-provider-program-riskforesight-content/

Billing and Chargeback

aws — AWS Organizations / AWS Cost Explorer

"AWS Organizations helps you centrally govern your environment as you grow and scale your workloads on AWS."
Source: https://aws.amazon.com/organizations/

"AWS Cost Explorer has an easy-to-use interface that lets you visualize, understand, and manage your AWS costs and usage over time."
Source: https://aws.amazon.com/aws-cost-management/aws-cost-explorer/

VMware Cloud Provider Hub / VMware Usage Meter and Usage Insight / vROps Chargeback Tenant App

With Cloud Provider Hub, partners can now manage end-to-end customer lifecycle management including onboarding customers, provisioning and managing services for them, having a consolidated view of their usage, and managing support.
https://cloud.vmware.com/cloud-provider-hub/hub
Licensing usage metering and automatic reporting using vCloud Usage Meter on-premises agent and vCloud Usage Insight SaaS.
https://cloud.vmware.com/cloud-provider-metering/
Tenant App generates monthly bills to provide an account of the overall expenses used for resources in an organization.
https://docs.vmware.com/en/Management-Packs-for-vRealize-Operations-Manager/2.4/rn/Tenant-App-24-Release-Notes.html